EXPLORING INVESTMENT IN WORK- RELATED LEARNING IN BRITISH COLUMBIA

for the

INDUSTRY TRAINING
AND APPRENTICESHIP COMMISSION (ITAC)
OF BRITISH COLUMBIA

by

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CONTENTS

EXECUTIVE SUMMARY 1

I. INTRODUCTION 1

II. SCOPE AND LIMITS 1

III. THE FINDINGS 2
- INVESTMENT IN PRE-EMPLOYMENT LEARNING 15
- INVESTMENT IN LEARNING WHILE WORKING 21
- ACCESS, EQUITY, AND CAPACITY 30
- SUMMARY DATA 36
- RETURN ON INVESTMENT (ROI) IN TRAINING 37
- INTERNATIONAL COMPARISONS 41

IV. POLICY DIALOGUE 43
- ISSUES AND QUESTIONS 43
- CONCLUSIONS AND DIRECTIONS 45

APPENDICES
- A 47
- B 49
- C 52

INTERVIEW LIST 58
END NOTES 59
SELECTED REFERENCES 60

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EXECUTIVE SUMMARY

The Context

The Industry Training and Apprenticeship Commission (ITAC) of British Columbia requested a study of "investment in work-related learning", as one of its continuing initiatives to draw public attention to:

- the serious pending trade and technical skill shortages in this province,
- the importance of investment in work-related learning in B.C, and
- the need to enhance the quality and methods of allocation of "work-related learning", and
- the need to consider increasing work-related learning investment in both private and public sectors.

The purpose of the study is to provide an initial picture of the current levels of investment in work-related learning by the various participants not only in "industry training and apprenticeship" but also in the broader "learning system" of the province.

The core research question is: How much does each of the contributors to work-related learning invest in this area of learning?

Scope and Limits

"Work-related learning" is an uncommon term. While almost all learning could be seen as work-related to some degree, the term and this study have been limited to learning activities that relate directly or indirectly to the mandate of ITAC, and specifically:

- Learning as preparation for work (or pre-employment/entry level training)
- Learning while working

- Apprenticeship and other structured industry-based training
- Learning as retraining or upgrading.

This report acknowledges that work-related learning includes consideration of formal, informal, and non-formal learning. As well, both direct and indirect costs need to be taken into consideration when reviewing and evaluating levels of investment in work-related learning. This study also indicates that there are two broad categories of investors: internally driven investors (individuals and those who invest in learning opportunities for their employees) and externally driven investors (those who invest in learning opportunities for individuals and groups other than their own employees).

The Process

Industry leaders, both employers and unions, as well as governments and educational organizations, contributed information and perspectives to this preliminary study.

Their input, plus analysis of relevant documents and databases, provide the information base, the rationale for conclusions drawn from the data, and the basis for the proposals for policy dialogue contained in this report.

THE FINDINGS

Learning as Preparation for Work

"Learning as preparation for work" includes

- secondary school work-related programs and activities for both youths and adults,
- post-secondary technical, vocational, technological, and applied programs in both public and private colleges, institutes, and university colleges, and
- community-based and institution-based adult education initiatives with a training objective.

This report indicates that:

- governments, both federal and provincial, are the major investors in pre-employment training or "learning as preparation for work" – well in excess of $700,000,000 annually in B.C
- individual students/trainees in the post-secondary sector invest some 10-15% of their total training costs
- students in private post-secondary institutions and adult education programs bear the full cost of their training, and
- industry invests in pre-employment training through bursaries, scholarships, gifts of equipment, and similar in-kind contributions as well as by providing access to their workplaces for trainee learning and by subsidizing the tuition costs for many employees who continue their education while employed.

Learning while Working

"Learning while working" includes

- apprenticeships
- other structured industry-based training
- upgrading existing knowledge and skills
- retraining for new or different tasks or responsibilities

This report indicates that:

- there are great difficulties in providing precise estimates of the amount of money invested in work-based training
- less than $65,000,000 per year is committed by provincial and federal governments to apprenticeship training in B.C
- more than 70% of B.C private sector firms appear to invest in training, with the majority of them not anticipating an increase in their training investment in the years ahead
- British Columbia private sector firms invest more than $400,000,000 a year in formal workplace training, with many "training funds" determined through negotiations and managed through joint labour-management boards

- the total B.C formal industry training investment, in private and public sectors, is probably well in excess of $500,000,000. This figure could almost be doubled if indirect costs of formal training are included.
- the mean formal training investment for B.C private sector firms is more than $7,700
- there are very wide variations in investments in "learning while working" in B.C by size of organization and by industry sector
- about 675,000 British Columbia residents participate in job-related adult education and training each year.
- small and medium sized enterprises in B.C have generally not tracked their training expenditures
- training investments are not distributed equitably among members of the B.C workforce. Training investment is directed disproportionately to those with higher levels of education.

A summary chart identifying work-related learning investment patterns in British Columbia by investor category is provided.

Return on Investment

This report presents an initial assessment of the impacts that work-related training have on trainees and firms.

The assessment indicates that

- intangible impacts (such as increased self-confidence or increased corporate commitment) were rated higher by employees than tangible ones (such as promotion or increased earning power).
- employees who participated in work-related learning activities reported significantly higher wages and wage growth than other employees.
- firms and employers saw a positive association between work-related learning and economic performance.

International Comparisons

Investments in "learning while working" by other Western nations is provided as a measure of comparison.

The international comparisons indicate that

- Canada's investment in work-based training is "average" – or slightly lower than average - in relation to US, European and Asia Pacific countries.
- British Columbia's work-related training performance appears somewhat better than the Canadian average.

Policy Dialogue

Based on the evidence and perspectives in this report, a policy conversation within ITAC on issues pertaining to "work-related learning" is proposed as a first step in the action process.

The policy conversation should include

- the need for increased or redistributed investment
- sources of additional investment
- distribution of investments
- cost effectiveness of work-related learning
- investment implications of immigration as a source of skilled personnel
- improved marketing of "return on investment in work-related learning".

This report then draws attention to the fact that **training data from even the recent past may not be reliable for policy planning purposes** as British Columbia now finds itself as a participant in a highly competitive global economic environment.

Tracking trends in investment in work-related learning, in British Columbia and in comparison to other jurisdictions is presented as an **essential course of action**, to underpin most policy planning, policy decision making, and action on work-related learning.

Four appendices are provided to address issues that are at least peripheral to the main research question.

Appendix A tables data on **Barriers, Disincentives, and Obstacles** to "work-related learning".

Appendix B notes **diversity in work-related learning patterns** by identifying the impact of unionization on "work-related learning" and by demonstrating that three sectors of the workforce – two public and one private -have different commitments to "work-related learning".

Appendix C provides an **extensive checklist of training investments**, returns on training investments, and costs of "work-related training".

Appendix D discusses **training evaluation methods** in historical perspective.

The List of Persons Interviewed is followed by **End Notes** referred to in the text. A list of **Selected References** from a much larger list of documents and databases consulted completes this report.

1. INTRODUCTION

Purpose

Since its establishment in 1997, the Industry Training and Apprenticeship Commission of British Columbia (ITAC) has been a leading advocate for training and skill development in this province. Most recently, ITAC has drawn public and industry attention in several ways to the pending province-wide and industry-wide shortage of skilled workers, prompted in part by the aging of the current workforce and the general need for more advanced skills in the B.C labour market. Its most recent report, Ensuring a Skilled Workforce for British Columbia, published in March 2001, calls for a proactive provincial strategy to "head off serious skill shortages in trades and technical occupations in the coming years".

This strategy is in some respects an extension of work initiated by the B.C Labour Force Development Board. The Board's report, Training for What? in 1995 was one of the first to focus attention on new labour market conditions and their implications for skill development. Kunin and Gallagher's report, Work-Based Training – A Key to Prosperity in 2000 reinforced the urgency to address training and skill development as a critical element in B.C's economic development. Other ITAC publications and reports since 1997 have highlighted similar themes.

As part of its current plan to take action on the skill shortage issues, ITAC wishes to have a detailed picture of the levels of current investment not only in the training and development system it leads, but also in the broader 'learning system' of the province.

This study is a preliminary overview of the extent and nature of investment in work-related learning in British Columbia, requested by the Industry Training and Apprenticeship Commission (ITAC) of British Columbia. It is meant to provide some of the basic information upon which appropriate public policy and innovative skill development practice can be developed and supported by the many constituents who

need to be sure of an adequate supply of highly skilled trades and technical personnel in the decade ahead.

However, this report is not, and is not intended to be, a comprehensive study of all the education and training investment issues. Rather, it is intended to present a first "broad brush" picture of the topic, to identify policy issues and questions arising from the analysis of the information that is available, and to propose further lines of investigation and directions for action.

More specifically, this paper is intended to achieve three objectives:

1. to provide a preliminary exploration and comparison of the extent to which the various participants in work-related learning in our province – business, unions, individuals, governments, associations, and others – invest in "work-related learning",
2. to highlight those factors that help explain why these participants invest in work-related learning to the extent that they do, and
3. to provide preliminary information on what the return on investment in work-related learning in our province might be and how it has been measured.

Methodology

This report is presented in five (5) sections:

1. the introduction, identifying the purpose and objectives of this study, the research methodology, and the major sections of this report,
2. a clarification of the scope and limits of this study,
3. the findings, in five (5) categories, together with summary data,
4. a series of four (4) appendices on topics related to the central issue under study, and
5. an introduction to a policy dialogue and identification of potential policy issues, questions, implications, and directions for further study.

II. SCOPE AND LIMITS

Work-Related Learning Categories

It was necessary to begin this study by defining and putting boundaries on the term "work-related learning" because it is an uncommon term not found in the literature or in common usage. In addition, many people observed that, at least in some senses, everything people do has a learning component and that almost all learning can be seen as being "work-related" to some degree.

The initial working definition was broad enough to encompass all post-secondary education provided by public and private post-secondary institutions and community-based organizations. This definition would include university undergraduate and graduate degree programs that had a work-related component to them (such as business, or forestry, or an Executive MBA program) as well as work-based training as that term is conventionally understood. Similarly the expectation was that both highly structured and very personalized, unstructured "learning" of one's choice at one's own initiative would be included.

Informal discussions of workable definitions and boundaries to this study, as well as the initial literature reviews, led to much greater restriction on the term "work-related learning". It was decided that, for the purposes of this study, "work-related learning" should be limited to three broad categories:

1. Learning as preparation for work, in a direct and immediate way. This category would consist of instructional programs and courses provided by schools and public and private educational institutions and community agencies, primarily at a post-secondary or adult level. Such courses and programs in British Columbia are conventionally identified as either "entry level trades training" or "technological, technical, career and vocational" – that is, studies that prepare students or trainees for immediate entry into the workforce upon completion of their training. Most such programs are primarily institution-based but many have a significant 'work experience' component.

This category is often referred to as pre-employment training or entry level training and might also be thought of as "trade and technical skills training".

Categorizing in this fashion excludes both undergraduate and graduate university programs, even though they may have work preparation as a primary objective, but includes applied degree programs at university colleges.

Also included are school district career education and career preparation programs, school apprenticeships, and the mandatory work experience curriculum component for senior secondary students. As well, training courses and programs offered for adults by school districts and investment in training initiatives by the Ministry of Education for adult learners are included under the "work-related learning" umbrella.

2. Learning while working. There are two (2) sub-categories of "learning while working": apprenticeship and other structured industry-based training and upgrading or retraining of already highly skilled and knowledgeable people.

    - The apprenticeship system in British Columbia is the classic example of combining work and learning or of having the initial experience 'on the job' as a learning, as well as work, experience. In recent years, adaptations of the traditional apprenticeship system have become evident and the plan for this study would include both apprenticeship and structured but usually shorter term industry-based learning, now referred to as 'industry training' by ITAC.

    - Learning as retraining or upgrading of knowledge and/or skill for workforce members. Substantial numbers of the workforce want and need the opportunity to upgrade or to retrain for new work situations. Similarly, many employers want and need their employees to upgrade their knowledge and skills. This form of 'on-the-job', or 'release time', learning should be factored into a study of "work-related learning".

Limits and Constraints

Many terms other than "work-related learning" have been used to describe components of the learning categories identified above. Indeed, other terms such as "work-based training", and "industry training" are in more common usage.

It was also recognized that some forms of "work-related learning" would be complex if not impossible to categorize, analyze, or measure. In this connection, measuring or estimating "foregone income" or "opportunity costs" on the part of trainees and unemployed persons, and calculating the contributions of industry to infrastructure costs would be particularly difficult. Appendix D addresses "opportunity costs" and related issues.

As well, there seemed widespread recognition that researchers often sub-categorize training as "formal training", "informal training", and "non-formal training". The first of these involves courses or training packages of different kinds and professional trainers; "informal training" identifies training that is provided on a day-to-day or "as required" basis in the workplace, usually by a supervisor or mentor; and, "non-formal training" is learning that an individual engages in at one's own initiative and on one's own time. It is clear that "formal training" is measurable, "informal training" can only be estimated, and "non-formal training" is real but defies measurement or estimation.

Investment in work-related learning also needs to cover both "direct" and "indirect" or hidden costs. There are several direct costs such as the payment of trainers, but indirect costs are both real and substantial, if much more difficult to measure with precision.

Rubenson and Schuetze (p.3) also draw attention to the ambiguity that results from making sharp distinctions within "work-related learning" and from separating out "work-related learning" from other learning. They note:

> "A major difficulty of concentrating on financing of work-based training is the close interconnectedness of training with other parts of education and training. Decisions that are aimed at work-based training are likely to have effects on the school-based education system and vice-versa. This is particularly apparent when looking at systems that are built on the principle of alternation between learning in the workplace and learning in the classroom, for example, apprenticeship training. This close connection is the reason why some of the (financing) models concentrate on the entire post-secondary education and training system rather than on training alone."

All these factors taken into consideration, it was decided to limit the scope of this study to those kinds of "work-related learning" activities that relate in a direct or indirect way to the mandate of the Industry Training and Apprenticeship Commission (ITAC). Thus, this study is limited to "learning as preparation for work" and both sub-categories of "learning while working". It addresses issues of both formal and informal learning, and includes consideration of both direct and indirect costs of "work-related learning".

For the purposes of this study, two large groups of "investors" in work-related learning" have been identified:

- internally driven investors or businesses, institutions and other agencies that invest in the training and development of their own personnel, and individuals (and families) who invest in the acquisition of additional knowledge and skill on their own, and
- externally driven investors, such as governments, institutions, and other agencies that invest in the development of people and businesses (private and public) other than their own employees.

These "investors" direct their investments to some or all of the categories of work-related learning noted above.

This conceptual framework is presented in Chart A which follows.

CHART A – INVESTORS AND CATEGORIES OF WORK-RELATED LEARNING

INVESTORS IN WORK-RELATED LEARNING
Externally Driven HRD Investors*
Provincial Government Investors:
- ITAC
- HR Ministry
- Ministry - Advanced Education
- Other provincial ministries
- Other Local Government levels
- Provincial crown corporations /agencies
Federal Government/Other Investors:
- HRDC
- Other federal departments
- Federal crown corporations & agencies
- Unions
- Professional associations
- Institutional grants, fee waivers, etc.
Internally Driven HRD Investors**
- BC private sector for-profit (business employers
- BC private sector not-for-profit (organization) employers
- Public sector employers – provincial ministries
- Public sector employers-federal departments
- Crown corporation/agency employers – provincial
- Crown corporation/agency employers – federal
- Individuals (self or family)
CATEGORIES OF WORK-RELATED LEARNING
Pre-Employment Learning
- Entry Level Trades Training
- Vocational Training
- Career/Technical Training
- Applied Degree Programs
- HRDC-type EA/AI Job Search, etc.
Learning While Working
- Apprenticeships
- Apprenticeship-like Training:
• industry-based training
• institutionally-based training, e.g., co-op education
Learning As Retraining
- Formal OJT activities
- Formal adult and continuing education & training activities
- Informal OJT activities
- Informal self-directed training activities
Learning As Upgrading
- Formal OJT activities
- Formal adult and continuing education & training activities
- Informal OJT activities
- Informal self-directed training activities
*Externally Driven HRD Investors = refers to those institutions, agencies, organizations, businesses, etc. that allocate budgets that are devoted to funding work-related learning activities involving individuals, groups, companies, organizations, etc., other than their own employees
**Internally Driven HRD Investors = refers to those institutions, agencies, organizations, businesses (or individuals), etc. that allocate budgets that are devoted to funding work-related learning activities involving their employees (or themselves)

III. FINDINGS

This exploration is rooted in two information sources: the relevant literature (documents and databases), and interviews with people familiar with policy and practice in one or another dimension of "work-related learning" in British Columbia. (See Note 1). The review of literature and databases and the conduct of the interviews were undertaken concurrently but independently, and the results of each have been collected in each sub-section of this section of this study, below.

There are limitations to both of these sources of information. With respect to documents and databases, studies and surveys have been conducted independently for different purposes and, as a result, most information is more indicative than conclusive. While it is tempting to make comparisons and do extrapolations from non-comparable data, extrapolations are by their very nature general or estimates rather than precise, hard measures. In all, however, the databases provide important and useful 'order of magnitude' measures of investment in work-related learning.

With respect to the interview processes and results, it is important to note that, with the exception of one common question, the interviews were open-ended and, as a result, unique rather than cumulative.

The common interview question was: What data can you provide to indicate the level of investment in work-related learning made by the constituency you represent? With the exception of one corporate officer, government officials, school district leaders, and ITAC personnel, interviewees could not provide, or give direction to obtaining, data indicating the level of investment in work-related learning by their constituency, or other constituencies.

The open-ended interview process following the common interview question produced almost unanimity of response, despite the diversity of background and constituencies of those interviewed. In particular, compilation of the interview results produced the following general commonalities:

- The perspectives of the interviewees were consistent with the conclusions from the document and database reviews.

- The interviewees came to substantially common (or non-conflicting) conclusions about investment in work-related learning, regardless of the constituencies with which they identified themselves.
- "Work-related learning" is an uncommon and imprecise term, even when limited to "learning as preparation for work" (or pre-employment training) and "learning while working" (or industry training).
- Even the term "training" is imprecise, because there are many different forms, kinds, and definitions of "training".

The 'softness' of much of the data and the vagueness of some of the terminology used in the interview process may be necessary and appropriate in a study of this nature, but they should provoke caution in interpreting conclusions drawn from these two sources of information.

INVESTMENT IN PRE-EMPLOYMENT LEARNING

Documents and Databases

It is not difficult to identify the investors in pre-employment training. In fact, there are only two major ones. The provincial government has been the dominant funder of post-secondary training, as part of its contribution to the maintenance and development of a public post-secondary educational system. Equally, it has funded a school system that provides learning opportunities for adults as well as some "work-related learning" for secondary school students. There are also many government-subsidized community-based training opportunities, at Community Skill Centres and other facilities throughout the province.

Some 85-90% of the costs of public post-secondary training programs are borne by the provincial government, with the remaining costs borne by the trainees through tuition and related course fees (the influence of private sector gifts and donations, of

some significance for universities and colleges, has been of marginal significance for public secondary and post-secondary "training"). In many cases, post-secondary trainees take advantage of government-backed student financial assistance programs such as loans or wage subsidies (See Table 1). One effect of these programs is to increase in the investment by government in this – and all other – forms of public post-secondary education.

Some 250 of the private post-secondary career training colleges (a major component of the private post-secondary education sector of more than 1,000 B.C institutions) have provided pre-employment training opportunities for almost as many trainees as the public institutions (Gallagher & Sweet, pp. 192-200).

Because tuition and other fees are much higher in private than public post-secondary training institutions, most trainees in private institutions invest considerably more in their own training (generally 100% of program and related costs, from $4,000 to $10,000 per 10 month year) than trainees in public institutions. Most private sector trainees also have access to publicly funded student financial assistance programs, thus increasing the public investment in their training.

The secondary schools of British Columbia provide Career Education for senior secondary students. This includes Career Education programs for some students, increasingly popular secondary school apprenticeships, and limited "work experience" for all senior students. The Ministry of Education invests, through the school districts in excess of $43,500,000 annually in Career Education for secondary school students (Table 1). In addition to this, many school districts use the limited discretion they have to invest even more in "work-related learning" for secondary school students.

Note should also be taken of the $47,500,000 invested by this Ministry in Adult Basic Education which is a form of "pre-work-related learning" for many adult British Columbians (Table 1).

It is important to recognize as well that public institutes, colleges, the Open Learning Agency, and school districts provide a great deal more "work-related learning" than is funded by government. In addition to their core work, they offer "training by contract with industry", the costs of which are borne by the trainees without any government subsidy. These activities range from single courses to complex, elaborate, and expensive training programs and packages. BCIT and several of the colleges provide a substantial amount of contract training where the funding is provided by a corporate or government agency client. Financial or investment data on these activities is only available from the providing institutions; no province-wide data is available.

Interview Perspectives on Investment in Pre-Employment Learning

The people interviewed cast additional light (or information) and fresh perspectives on the level of investment in pre-employment learning by training institutions such as BCIT, ECIAD and the community and university colleges. A summary of views of those interviewed follows immediately below.

Views and themes

- Trainees and students pay a significant amount for their training, beyond the tuition costs, even though tuition costs are only a small percentage of total training costs. The additional costs in foregone or deferred income, for full-time students and apprentices, are seen to be of great significance, but other costs of materials, tools, books, childcare, and other personal costs are also significant. A more detailed discussion is provided in Appendix D.
- Schools in B.C do a far better job of helping students make the transition from school to further studies at university than do school systems in the rest of Canada.

- Our provincial government has put more money into work-related learning in institutes and colleges than have provincial governments elsewhere in Canada. Training in B.C has not suffered as much from restraint as training in other provinces.
- Our educational institutions cannot be confident that they are spending their resources wisely and in the public interest. We need some system rationalization to get the greatest return on investment in education and training.
- If governments want to encourage change, they should develop funding mechanisms that encourage collaboration rather than competition among training institutions.
- Traditional apprenticeship is not the only good form of industry training. The flexibility of co-op or "work experience" is a great advantage in many cases.
- In the main, technical and vocational instructors are focused on their students, their shops, and jobs for their graduates. They just want to get on with their work, and are not really interested in much of the other parts of college life.
- Most K-12 teachers, counsellors, and many school administrators have been university trained. Often, they know very little about labour markets and so they frequently do not advise students well.
- Our schools may do an excellent job for students who go on to college or university, but they are only a small percentage of the total school population.

Quotes

- "Our secondary school curriculum needs to become much more flexible – and quickly so – if we are to respond to the needs of most secondary school students".
- "We should rethink the whole secondary school experience in the light of the economic and social circumstances in which young people live and learn today. There is a real danger that we could prepare this generation of students for the past rather than for the future".

- "Our school system is still using a model for education from an industrial era. We don't do nearly as good a job for the majority of students who do not go on to university or college".
- "I have seen so many people – many in their late 20s – turn around their lives by getting pre-employment training in any of several fields. The lucky ones are those who get apprenticeships".
- "You really should have interviewed students and trainees. Almost all of them will tell you that they have a high degree of satisfaction with their training".

A Summary of investments by governments

A summary of recent investment by the provincial and federal governments in various forms of "learning as preparation for work" is displayed in Table 1, which follows. The information is province-wide, collected at a system level. Comprehensive supplementary information at an institutional level was not available at the time this study was undertaken.

Table 1 – Provincial and Federal Funding for Work-Related Learning - Summary Estimates

Funding Category	ITAC 2001/2002	MAETT 2001/2002	MSDES 2000/2001	HRDC 2000/2001	MOE	Totals
Entry-Level Trades Training (ELTT)	**49,786,516**					
Pre-Employment/Career Prep Programs (PEPs)		64,400,000			43,542,000	
ABE, ELT, EOW, ASE, First Nations (PEPs)****		**8,900,000**		**908,000***		
ABE (other)		46,550,000			27,061,000	
New Programs (PEPs)		**1,239,000**				
Native Education Centre (PEPs)		547,000				
Career Technical Centre (PEPs)	**1,442,334**	**363,000**				
Adult/Continuing Education		14,353,000				
Sub-Total						$279,530,900
Self-Employment			**1,830,000**	**25,585,000**		
Sub-Total						$ 27,415,000
Technical Training (apprentices)	**17,948,000**					
Industry Training (work-based)	1,704,000		30,655,000			
Skills Training (journeypersons & apprentices)	**945,000**			**11,000,000****		
Skills Training (CRF)				2,372,000		
Sub-Total						$ 64,624,000
Under-Represented Groups (URGs)	**900,000**		**11,600,000**	**28,400,000**		
Employability Skills Training			22,893,000			
EI/IA Skills Training				**99,082,000**		
Aboriginal				53,332,000		
Sub-Total***						$216,207,000
Career technical programs		**169,732,000**				
University college (technical/career oriented degrees, other)		29,049,000				
Other degree programs (technical/career oriented)		**4,590,000**				
Sub-total						$203,371,000
TOTALS	**$72,725,900**	**$339,723,000**	**$66,978,000**	**$220,679,000**	**$91,042,000**	**$791,147,900**

Source: documentation supplied by Ministries through the office of the ITAC A/Director, Policy and Planning

Notes: ITAC = Industry Training and Apprenticeship Commission; MAETT = Ministry of Advanced Education, Training and Technology(now Ministry of Advanced Ed); MDES = Ministry of Social Development and Economic Security(now Ministry of HR); HRDC = Human Resource Development Canada; figures are rounded to nearest ,5000. * = National Literacy Secretariat funding for Community Initiatives (source: Literacy B.C.); ** = reimbursement for apprenticeship course costs; *** = funding includes a range of assistance with "Youth Initiatives" not included; **** ABE, ELT, EOW, ASE = Adult Basic Education, English Language Training, Equal Opportunity Work, Adult Special Education.

Table 1 – Provincial and Federal Funding for Work-Related Learning - Summary Estimates

Funding Category	ITAC 2001/2002	MAETT 2001/2002	MSDES 2000/2001	HRDC 2000/2001	MOE	Totals
[illegible]						
Pre-Employment/Career Prep Programs (PEPs)		64,400,000			43,542,000	
[illegible]		[illegible]		[illegible]		
ABE (other)		46,550,000			27,061,000	
[illegible]		[illegible]				
Native Education Centre (PEPs)		547,000				
[illegible]	[illegible]	[illegible]				
Adult/Continuing Education		14,353,000				
Sub-Total						$279,530,900
[illegible]			[illegible]	[illegible]		
Sub-Total						$ 27,415,000
[illegible]	[illegible]					
Industry Training (work-based)	1,704,000		30,655,000			
[illegible]	[illegible]			[illegible]		
Skills Training (CRF)				2,372,000		
Sub-Total						$ 64,624,000
[illegible]	[illegible]		[illegible]	[illegible]		
Employability Skills Training			22,893,000			
[illegible]				[illegible]		
Aboriginal				53,332,000		
Sub-Total***						$216,207,000
[illegible]		[illegible]				
University college (technical/career oriented degrees, other)		29,049,000				
[illegible]		[illegible]				
Sub-total						$203,371,000
TOTALS	**$72,725,900**	**$339,723,000**	**$86,978,000**	**$220,679,000**	**$91,042,000**	**$791,147,900**

Source: documentation supplied by Ministries through the office of the ITAC A/Director, Policy and Planning

Notes: ITAC = Industry Training and Apprenticeship Commission; MAETT = Ministry of Advanced Education, Training and Technology(now Ministry of Advanced Ed); MDES = Ministry of Social Development and Economic Security(now Ministry of HR); HRDC = Human Resource Development Canada; figures are rounded to nearest ,5000. * = National Literacy Secretariat funding for Community Initiatives (source: Literacy B.C.); ** = reimbursement for apprenticeship course costs; *** = funding includes a range of assistance with "Youth Initiatives" not included; **** ABE, ELT, EOW, ASE = Adult Basic Education, English Language Training, Equal Opportunity Work, Adult Special Education.

INVESTMENT IN LEARNING WHILE WORKING

Documents and Databases

A Conference Board of Canada report noted that training and development as investment in human capital should be increasing because the "post-industrial, knowledge-intensive era is upon us"...and..."invisible capital—driven by the skills and knowledge of people—is at the forefront of organizational competitive advantage". (p.1)

However, determining the measure of investment in work-related learning for people already in the workforce, as defined above for the purpose of this study, is complex. Adding to the complexity is the fact that the literature generally combines investment in apprenticeships and investment in upgrading and retraining into a single category.

Apprenticeships and apprentice-like training are basis components of "learning while working". Table 1 indicates that only some $65,000,000 is invested in apprenticeship training by governments.

In 1995, Betcherman et. al. (pp. 22-23) estimated that 70.3% of Canadian establishments conducted some workplace learning activities, with formal training reported at 41.8%. The authors did note that "the limited available evidence suggests that the amount of informal training undertaken by firms far exceeds the amount of formal training" and the share of formal training rose with the firm size. (p. 6) Similar observations were made using U.S. data. (Frazis and Loewenstein, 1999)

In BC, the overall workplace learning activity figure was 76.2%, with formal training representing 45.7%. From a Canadian perspective, the larger the establishment the greater workplace learning incidence: (i) 100+ employees reported 96.1%; (ii) 20-99 employees reported 84.2%; and (iii) < 20 employees reported 67.9% workplace learning incidence. There is nothing to suggest that the incidence of work-related learning by establishment in B.C would vary significantly from patterns in the rest of Canada.

In 1997, Betcherman and colleagues at the Canadian Policy Research Network (p. 36) reported on one of the most extensive reviews of work-based learning in Canada. This report had a strong and revealing disclaimer:

> "The difficulties in providing precise estimates of the amount of money spent ... stem from various sources: first, many establishments do not track training expenditures; second, those that do use a variety of accounting methods; and third, informal training that is closely interwoven into the work process, by its very nature, defies precise costing."

In that Workplace Training Survey, only 33.6% of establishments that undertake training activities reported having a training budget, and only 57% indicated that they tracked training expenditures.

For the purposes of this (ITAC) study, Statistics Canada conducted a special database run using its yearly "Workplace and Employee Survey" to estimate the amount British Columbia private sector firms spent in (formal) workplace learning activities from April 1, 1998 to March 31, 1999. (See Note 1). The total for British Columbia was $229,209,025.

However, given Betcherman's observations above, one could conclude that this figure is conservative. That is, the Statistics Canada database showed that 52,407 firms did "on-the-job" training. However, only 29,527 of these firms apparently had the training budget data to respond to a "training expenditures" question. Assuming that the firms which were unable to give training expenditure data spent, on average, the same as those that were able to report their expenditures, a conclusion could be that the actual private sector investment in "on-the-job" training was up to 77.5% higher – or a total of approximately $406,000,000.

Note as well that Statistics Canada did not survey public sector organizations in this survey. The additional public sector work-related learning figure should be added to

these totals for private sector firms to have the total picture. It is legitimate to hypothesize that yearly formal work-related learning expenditures in B.C is probably in the order of $500 million annually.

The 1999 Conference Board of Canada (CB/C) survey suggested a relatively stable involvement by employers in work-based training over the previous five years. Only 50% of the organizations had predicted increases in their near-term training and development expenditures. This was offset by organizations predicting no change (42%) or decreased expenditures (8%). For the 2001 CB/C survey, the figures changed significantly: 40% (increase), 57% (remain the same); and 3% (decreasing). As far as B.C is concerned, the 1999 Statistics Canada special database run reported that 28.4% of private business firms expected to increase their training expenditures for year 2000, with 66.8% anticipating no change, and 4.8% expecting to decrease such expenditures.

Yet, the 1999 CB/C report noted that training and development as investment in human capital should be increasing because the "post-industrial, knowledge intensive era is upon us" and ..."invisible capital... driven by the skills and knowledge of people ... is at the forefront of organizational advantage" (p. 1). Furthermore, in the CB/C's 2001 report (Training and Development Outlook) and through its news release, it was noted that: "Since 1993, the average training investment per employee in Canada has remained at roughly $800-$850 per year" and "Given the recent prolonged period of economic growth and high profit levels, it would have been reasonable to expect increased investment in training and development, but this has not been the case."

Gross estimates of Canada-wide formal training expenditures by employers (often the product of negotiated agreements and managed through joint labour-management boards) are presented in Tables 2 and 3 (Betcherman, p. 37). The data are limited to estimates from respondents indicating that they actually tracked expenditures. Clearly, the differential between total mean ($41,250) and median ($4,800) training expenditure figures indicates that some establishments are reporting very high

expenditures. The special Statistics Canada database run for this report indicated that the mean training expenditures for British Columbia private sector firms was about $7,763 per firm.

Table 2: Estimated 12-Month Establishment Expenditures On Formal Training
(Canada, 1994-95)

Expenditure Category	Mean ($)	Median($)
Total Expenditures	**41,250**	**4,800**
Expenditures Per Employee	1,058	444
Expenditures Per Trainee	**1,788**	**800**

Source: Betcherman, et. al., p. 37.

When these Canadian data were recalculated by "employment size" and selected "industrial categories", wide variations were noted. Overall, and as one might expect, larger firms spend significantly more than their smaller counterparts. However, the opposite is true when average ("mean") cost per employee and/or trainee is calculated. The authors speculated that the data in Table 3 "almost certainly reflect the higher relative costs faced by small firms in providing training" (p. 36).

From the perspective of industrial categories, the CB/C survey also suggested that "smaller firms typically spend more training dollars per capita than larger firms, because they are not able to capture the benefits from economies of scale".

Table 3: Estimated 12-Month Establishment Expenditures On Formal Training
By Establishment Size And For Selected Industries (Canada, 1994-95)

	Mean Total Cost ($)	Mean Cost Per Employee ($)	Mean Cost Per Trainee ($)
Establishment Size			
Fewer Than 20 Employees	17,447	1,183	11,994
20-99 Employees	**19,447**	**555**	**935**
100 Or More Employees	336,577	498	843
Industry			
Distribution Services	24,566	1,355	2,285
Information Services	**51,964**	**1,300**	**2,546**
Traditional Services	6,704	406	734

Source: Betcherman, et. al., p. 37.

Furthermore, the survey also revealed rather wide variations among industrial sectors with financial services, technologies/communications and government spending the most per capita, and wholesale/retail trade spending the least. (CB/C, p. 4). Employers are identified as the principal source of funding for formal workplace learning (Betcherman, et.al., p.37). Other sources include: (i) government programs; (ii) customers/suppliers; (iii) training trust funds; (iv) unions; (v) individual employees; and (vi) industry associations/organizations.

Government programs and customers/suppliers are the most important external sources, although neither appears to be used extensively (Table 4). For the most part, the larger the size of the establishment, the greater the use of external funding sources for workplace learning. The Betcherman et. al. study also found that the highest incidence of government program funding use in Canada varied considerably: BC (36.4%), followed by Ontario (25.2%), Quebec (14.8%) and Alberta (8.7%). (Betcherman, pp. 37-38)

Table 4: Training Funding Sources By Establishment Size (Canada, 1995)

Training Funding Source	Fewer Than 20 Employees	20-99 Employees	100+ Employees	All Establishments
	%	%	%	%
Government Programs	19.6	23.9	49.4	21.4
Customers / Suppliers	16.3	26.8	17.3	17.6
Training Trust Funds	0.0	3.1	10.2	0.8
Unions	0.0	1.9	13.9	0.8
Individual Employees	2.8	19.4	10.8	5.1
Industry Organizations / Associations	4.4	6.3	5.6	4.7

(Note that Table 4 may not have captured data in formats applicable to British Columbia.)

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Source: Betcherman, et. al., p. 37.

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[illegible]	[illegible]	[illegible]	[illegible]
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Furthermore, the survey also revealed rather wide variations among industrial sectors with financial services, technologies/communications and government spending the most per capita, and wholesale/retail trade spending the least. (CB/C, p. 4). Employers are identified as the principal source of funding for formal workplace learning (Betcherman, et.al., p.37). Other sources include: (i) government programs; (ii) customers/suppliers; (iii) training trust funds; (iv) unions; (v) individual employees; and (vi) industry associations/organizations.

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Training Funding Source	Fewer Than 20 Employees	20-99 Employees	100+ Employees	All Establishments
	%	%	%	%
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Customers / Suppliers	16.3	26.8	17.3	17.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Unions	0.0	1.9	13.9	0.8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Industry Organizations / Associations	4.4	6.3	5.6	4.7

(Note that Table 4 may not have captured data in formats applicable to British Columbia.)

Investments in training for people in the workforce need to acknowledge the reality of both "direct" costs and "indirect" or hidden costs. The 1999 CB/C survey (pp. 5-6) suggested that direct and indirect training costs for Canadian organizations are about equal as a percentage of payroll, with direct estimated to be at 1.7% and indirect at 1.5% (1.8% direct, and from 1.5% to 1.6% for indirect in the 2001 Survey p. 12) . The survey provided a breakdown for direct training costs in several categories (below):

Payments to outside trainers/companies	-	31%
Wages/salaries of all full-time training personnel	-	29%
'Other' training expenditures per employee	-	23%
Tuition reimbursement	-	23%
Total	-	100%

Indirect costs were described only as "lost wages of training participants".

This survey also confirmed that smaller organizations are more likely than their larger counterparts to use external training resources, as the former are less likely to have in-house training staff.

The most popular external providers of training used by the CB/C respondents included (p.9):

Federal, provincial or local government organizations	-	86%
Product suppliers	-	85%
Other firms including private training and consulting firms	-	77%
Community colleges	-	67%
Other educational institutions	-	57%
Independent training consultants or contractors	-	30%
Unions, trade or professional organizations	-	16%

(note: respondents could make multiple selections)

Interview Perspectives on Learning While Working

Some of the interviewees were initially reluctant to respond to questions about "learning" and "training", because these terms are so open to different interpretations and meanings. Nevertheless, there were common viewpoints on investment in "learning while working".

Views and Themes

- As a society, we really do not know who invest what in "work-related learning", or in most of the sub-categories of training and education for the intermediate skill workforce. Considering the very large amounts of money invested in total, this raises significant questions of accountability for the use of funds for "learning while working" - and for other kinds of learning.

- It is difficult to distinguish between "learning through experience" and learning through various kinds of training, retraining or upgrading. Where does learning through experience fit into the total picture of "work-related learning? Is "learning through experience" a form of "non-formal learning"?

- Industry (employers and employees) invest directly and indirectly, significant amounts in the training infrastructure as well as in direct costs for formal on-the-job training, but the infrastructure investments are rarely measured or acknowledged.

- It is difficult to access funds needed to keep up with the rapid and continuing changes in industry.

- Training, in one form or another, goes on almost all the time in any business. Otherwise, in today's and tomorrow's business climate, businesses will not survive.

- In general, small and medium-sized businesses – and many larger ones – have not tracked their expenditures on training and other forms of "work-related learning" because they have other priorities – primarily, maintaining the viability of the business - that must take precedence.

- Investment in work-related learning is largely not measurable with any significant level of precision, because so much of it is informal or not seen as "learning" or "training".

- In an increasingly knowledge-based economy, learning is increasingly informal and non-formal ("Working is Learning"!). As a result, while it has always been difficult to obtain an accurate and comprehensive picture of investments in many forms of "work-related learning", it is now even more difficult to do so.

- Firms and training organizations should look to better ways of using existing resources for "work-related learning" to meet workforce needs of today and tomorrow (more adaptability within training and education systems, use of more contemporary learning methods such as distance and e-learning, etc.) before pressing for increased investment.

Quotes

- "Beyond the basics, training is still too 'hit and miss'. So often it is driven by administrative needs and crises. We need to value training as essential in its own right".

- "We have to find the time, and get a substitute worker to fill in for us if we are to take advantage of the learning resources we have at our disposal. It is usually hard to find either the time or the substitute".

- "Investment in training should be greater, especially in the unorganized sector".

- "Smart employers see the wisdom of having training funds managed jointly by employers and employees".

- "More trades need to be compulsory. That would push up wage rates, but it would also guarantee really high quality work".

- "Apprentices are not being paid enough. Some contractors will pay more for a worker who is not an apprentice, but the worker will learn a lot less and never obtain the knowledge and skill of a tradesperson".

- "The real barrier to more investment in learning has been our inability to provide a measurable dividend or return on investment to employers".

- "First, we need a well supported economic plan. Then we can develop a good training plan to support the kinds of economic development that have high priority".

ACCESS, EQUITY, AND CAPACITY

Access to Workforce Learning

With the increasing globalization of "national" economies and the influence of free trade initiatives, it has become increasingly important to understand how work-related learning is currently organized and where the investments in learning have been placed.

Work-related learning and adult education participation rates give a first indication of ability to respond to and take advantages of the changes inherent in these social, political and economic realities. As noted by Rubenson and Schuetze, "...the workplace has become a crucial aspect of a strategy of lifelong learning."(p. 7)

Respondents to an adult/continuing education survey in B.C a decade ago "made almost universal reference to the increase in part-time vocational programming" in recent years. The fundamental point made was that "... colleges and institutes general interest enrolment dropped 48% from 1983-1984 to 1990-1991, while part-time vocational enrolments rose 310%...". (Continuing Education in BC's Colleges and Institutes, 1992, p. 7) These figures are consistent with a special database run by Statistics Canada for this study, using the 1998 Adult Education and Training Survey. The data revealed that, of a total of 916,783 individuals in B.C. who participated in adult education and training, 675,115 gave the reason as "job-related" while 366,600 cited "personal interest" as their reason. (See Note 2).

Participants in part-time adult/continuing education and training in British Columbia public colleges and institutes have been paying for the bulk of their own training and upgrading programs, courses and other learning activities (52%). Employer contributions have accounted for 39%, waived tuition fees for 3%, and other for 2%. (Continuing Education 1992. p.7) In a related and more recent study, the percentage of British Columbia participants in all forms of adult education and training who received financial support from various sources gave the following breakdown for 1997 (the latest year for which data are available): employers – 55%; self/family –

47.7%; government – 7.6%; union/professional associations – 0.7%; no fees – 2.7%; and, other – 2.6%.

Canadian data revealed that, for courses that are for "a job-related purpose", the funding sources in 1997 were: employers and others (74%); employers only (54.6%); self/family (20.2%); government (6.4%); unions or professional organizations (3%); others (3.8%); no fees (11.1%). ("A Report On Adult Education and Training in Canada" pp.27,28,81)

A national Workplace Training Survey (WTS) involving 2,584 employers was conducted in 1995. One of the areas of analysis was the level of formal training activity conducted by employers. (Tables 6 and 7). The data confirms anecdotal observations that larger establishments conduct significantly more formal training (100+ employees at 85.7%) than smaller firms (<20 employees at 37.8%). In the 2001 CB/C survey, "respondents indicated that a majority of their employees (approximately 72%) received some kind of formal training in 2000."

As noted by Betcherman et al: "Larger firms are able to take advantage of economies of scale unavailable to small firms on their own and are better able than small firms to accommodate downtime while employees are being trained. Similarly, the fact that training activity is relatively low in some regions and some industries (e.g., Quebec at 30.5% versus B.C. at 45.7%, and construction at 33.6% and non-market services at 73%) raises the possibility that barriers or disincentives are higher in those segments of the economy than elsewhere."(Betcherman et al. 1998 p.3)

Rubenson and Schuetze also reported "large sectoral differences with non-market service industries - such as health and education - providing the most formal training. Further, companies competing in global markets showed high training activity, as did companies that were undergoing significant technological changes and/or changing work practices." (p. 8)

Table 5 illustrates the industrial variances for B.C. Significant variances are also noted when the data is restructured by key industrial classifications. (Table 6). In B.C., the percentage of the population participating in adult education and training by industrial sector can vary from 26% in the Goods Producing Industries to 45% in the Service Producing Industries – a 73.1% differential. And, of course, there are wide variations within each of these two general industrial classifications. (See Note 3).

Equity and Capacity

But access to work-related learning opportunity is hardly available in any equitable sense to all members of the workforce. It is particularly significant to note observations about access to work-related learning made in the CB/C study:

> "While formal training is being provided to a larger percentage of employees, a polarization surfaced in terms of who gets trained. Those with higher levels of education and higher paying jobs received more training. In contrast, those with lower levels of education are likely to have lower paying jobs and in turn receive lower levels of training, which further reduces their chances of improving their lifelong career prospects." (CB/C, p.2)

The 2001 CB/C survey noted, for example, "while only 22% of surveyed organizations' total staff fall into the executive, management and professional categories, these employee groups are allocated approximately 36% of the average total training expenditures. In contrast, service/production and clerical/support staff, while comprising a significantly higher proportion of total employees (63%), are allocated only 34% of total training expenditures."

These data reveal that "despite on going discussions about the importance of human resources development on the Canadian economy, only a minority of the workforce - mainly the already well educated - are engaged in education and training in the workplace". (Rubenson/Schuetze, p. 8)

Interview Perspectives on Access, Equity, and Capacity

Many interview comments relating to issues of access to, equity in, and capacity of, a "Learning while Working" system were broadly held.

Views and Themes

- Apart from apprenticeship training, firms in general have tended to invest their training expenditures in employees in more senior positions rather than in front line or shop floor (or equivalent) personnel.

- There has been a marked, positive change in recent years in the attitudes of many small business owners and managers with respect to the importance of investing in training.

- Our schools do not do a good enough job for students who learn through "hands-on experience".

- Access to "work-related learning" will be one of the major factors in the ability of firms to retain employees. In turn, employee retention will be a major challenge for employers in the next 5-10 years as skill shortages become even more acute than they have already become in several industry sectors.

- Our schools need to elevate the status and value placed on trades and technical training. They should honour their students who enter the workforce after school with scholarships and other awards, just as they do for graduates who go on to university.

- The traditional employer-employee relationship is changing in several industry sectors. Workers who were once employees are now dependent contractors, as in the trucking and forestry fields. The "employer" in such relationships feels little responsibility for training people who really are not their "employees".

Quotes

- "Our post-secondary institutions could do a much better job if they received block funding and if their boards were made accountable for training and education investment decisions. Too many funding decisions are now made at a (provincial) government level, not at an institutional level".

- "We brag about our students who win scholarships to universities, but we don't express equal pride in the majority of our students who enter the workforce through other avenues such as apprenticeships".

- "With the freezing of tuition fees for students who go on to post-secondary education, we have socialism for the advantaged and capitalism for the disadvantaged".

- "Far too many parents, as well as teachers, have unrealistic aspirations for their children. In many cases, parents have grandiose dreams but not realistic plans".

Summary Data

Table 8 provides a summary listing of all the external and internal investors in work-related learning – "learning as preparation for work" and "learning while working" - together with their recent estimated annual investments (with explanatory notes), where these are available.

The left hand column identifies the investment sources, both externally driven and internally driven.

The centre column provides the investment estimates, and it is important to observe that these figures are truly estimates, some of which may be considerably out of line with reality. In general, the estimates are on the conservative side. It would be

imprudent to simply add up the figures in this column and conclude that the result is the total investment in work-related learning in British Columbia.

The "notes" in the right hand column provide the year to which the investments refer, or give examples of investment sources where investment amounts are not currently available, or simply indicate that no financial information is available but it is known that some investments in work-related learning are in fact made annually.

Table 8 might be usefully reviewed in conjunction with Table1.

SUMMARY DATA

Table 8: Work-Related Learning Investment Patterns By Investor Category

Investor Category	Estimated Expenditures	Notes
Government (Provincial) Investors (external HRD)*:		
Industry Training & Apprenticeship Commission (ITAC)	$ 72,502,000	2001/2002
Human Resources Ministry (formally MSDES)	$ 66,978,000	2000/2001
Ministry for Advanced Education (formally MAETT)	$293,173,000	2001/2002
Ministry of Education	$ 70,765,000	Career Prep (98/99); ABE (2001/02)
Other provincial ministries		e.g., Ministry of Forestry
Other local governmental levels		e.g., municipalities
Provincial crown corporations/agencies		e.g., WCB, ICBC
Government (Federal) Investors (external HRD)*:		
Human Resources Development Canada (HRDC)	$220,679,000	2000/2001
Other federal departments		e.g., Indian & Northern Affairs
Federal crown corporations/agencies		e.g., Centre for Surface Transportation Technology
Other Investors (external HRD)*:		
Unions/professional associations		StatCan estimates that 0.7% of BC adults participating in education & training in 1997 received financial support from this investor category.
Institutional Grants, fee waivers, and other funds to individuals from schools, colleges, etc.		StatCan estimates that 5.3% of BC adults participating in education & training in 1997 received financial support from this investor category.
Investors (internal HRD):**		
BC private sector for-profit (business) employers	$229,209,025 or $407 million or $7-800 million	(April 1/1998-March 31/1999) This base figure ($229M) could be as high as $407 million given difficulties surrounding a lack of employer training budgeting and expenditure recording. If indirect or "hidden" costs are added the total figure could rise to between $700-$800 million.
BC private sector not-for-profit (organization) employers		e.g., unions, associations, churches, charities, foundations, etc.
Public sector employers–provincial ministries	$20,000,000	"Maintaining Human Capital in the BC Public Service: The Role of Training & Development", Auditor General's Office, 1999
Public sector employers–local governments		e.g., Burnaby Municipality
Public sector employers–federal departments		e.g., HRDC
Crown corporation/agency employers – provincial		e.g., ICBC
Crown corporation/agency employers–federal		e.g., CBC
Individuals (self or family)		StatCan estimates that 47.7% of BC adults participating in education & training in 1997 paid for the services themselves, or through their family.

*external HRD refers to those institutions and their yearly expenditures devoted to funding work-related learning activities involving individuals, groups, companies, organizations, etc. other than their own employees.
** internal HRD refers to those institutions and their yearly expenditures devoted to funding work-related learning activities involving their employees.

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Investor Category	Notes
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Ministry for Advanced Education (formally MAETT)	2001/2002
Ministry of Education	Career Prep (98/99); ABE (2001/02)
Other provincial ministries	e.g., Ministry of Forestry
Other local governmental levels	e.g., municipalities
Provincial crown corporations/agencies	e.g., WCB, ICBC
Human Resources Development Canada (HRDC)	2000/2001
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BC private sector not-for-profit (organization) employers	e.g., unions, associations, churches, charities, foundations, etc.
Public sector employers–provincial ministries	"Maintaining Human Capital in the BC Public Service: The Role of Training & Development", Auditor General's Office, 1999
Public sector employers–local governments	e.g., Burnaby Municipality
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RETURN ON INVESTMENT (ROI) IN TRAINING

Documents and Databases

What "impact" does work-related learning have? What outcomes can be reasonably attributed to this form of learning? What are the impact on employees and workplaces?

Numerous Return on Investment or ROI-related evaluation methods have been constructed and tested over the years to answer these questions. Two methods, "cost-benefit analysis" and "results-based management", are reviewed in Appendix D. However, "research is weakest in the area of impacts, where there is little analysis of returns to training from the perspective of either the employee or, particularly, the employer." In the end, the cause-effect research question still remains: "does training lead to successful organizations or do successful organizations train?" (Betcherman, et. al. 1998, p. 7)

Given this caveat, Betcherman et al used a case study approach and workers' self-assessment to assess training impacts. The latter asked employees receiving formal training through their employers to assess the usefulness of their training along seven dimensions (Table 9):

(i) increased my earning power;
(ii) qualified me for new types of work;
(iii) qualified me for promotion;
(iv) increased my self-confidence;
(v) improved my general employability;
(vi) improved my performance; and
(vii) increased my job satisfaction.

The results generated some less than obvious results. In the first place, intangible impacts - such as increased self-confidence, improved employability, improved performance and increased job satisfaction - all had a higher ranking that the more tangible impacts. Secondly, males consistently rated tangible impacts much more

favorably than their female counterparts, with the differences being statistically significant. For a rather complete description of work-related training benefits, refer to K. Barker's presentation in Appendix C.

An analysis was also conducted to compare the wages of workers who had received training with their current employers, and those who had had no training. In summary, employees who had participated in work-related learning activities reported significantly higher current wages and greater wage growth than their fellow workers who did not participate in these activities. This was true regardless of the comparisons within a number of categories, i.e., gender, age, and tenure with current employer and education level.

Table 9: Employee Perceived Impacts Of Formal Training Received From Employer (Canada, 1995-1996)

Attribute	Males	Females	Significant Difference	Both sexes
	Mean Score*	Mean Score*		Mean Score*
Increased my earning power	4.0	2.5	***	3.1
Qualified me for new types of work	4.1	3.5	***	3.9
Qualified me for promotion	3.3	2.4	***	3.0
Increased my self-confidence	4.6	4.5	not	4.5
Improved my general employability	4.6	4.3	not	4.5
Improved my performance	4.7	4.4	not	4.6
Improved my job satisfaction	4.6	4.3	not	4.5

Source: Betcherman, et. al., p. 66.
Notes: * Mean score on a 7-point scale where 1 = no benefit at all and 7 = major benefit

Establishments involved in workplace learning were also asked to evaluate the success of their activities (both formal and informal) across six dimensions (Table 10):

(i) higher productivity;
(ii) higher quality products;
(iii) assurance of supply of skills;
(iv) greater employee commitment;
(v) greater employee adaptability; and
(vi) overall importance of training to success of the establishment.

favorably than their female counterparts, with the differences being statistically significant. For a rather complete description of work-related training benefits, refer to K. Barker's presentation in Appendix C.

An analysis was also conducted to compare the wages of workers who had received training with their current employers, and those who had had no training. In summary, employees who had participated in work-related learning activities reported significantly higher current wages and greater wage growth than their fellow workers who did not participate in these activities. This was true regardless of the comparisons within a number of categories, i.e., gender, age, and tenure with current employer and education level.

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Attribute	Males	Females	Significant Difference	Both sexes
	Mean Score*	Mean Score*		Mean Score*
[illegible]	4.0	2.5	***	3.1
Qualified me for new types of work	4.1	3.5	***	3.9
[illegible]	3.3	2.4	***	3.0
Increased my self-confidence	4.6	4.5	not	4.5
[illegible]	4.6	4.3	not	4.5
Improved my performance	4.7	4.4	not	4.6
[illegible]	4.6	4.3	not	4.5

Source: Betcherman, et. al., p. 66.
Notes: * Mean score on a 7-point scale where 1 = no benefit at all and 7 = major benefit

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(ii) higher quality products;
(iii) assurance of supply of skills;
(iv) greater employee commitment;
(v) greater employee adaptability; and
(vi) overall importance of training to success of the establishment.

Overall, ratings were very favorable. The least favorable rating involved "assurance of supply of skills", whereas "higher productivity" and "higher quality products" scored the highest. Further analysis provided "evidence of a positive association between training and economic performance...establishments with training programs performed better that non-trainers. Moreover, this advantage was greatest for those respondents with the strongest commitment to training." (Betcherman, 1998, pp. 72, 80)

The CB/C study also noted that "a number of recent studies have positively linked training interventions to organizational performance". (p. 3) The Board cited an American Society for Training and Development report suggesting companies with the highest training expenditures demonstrated 57% higher net sales and 39% higher gross profits per employee, along with a 15% higher ratio in market-to-book values (Bassi and McMurrer 1998, p.3). These figures were re-confirmed in the 2001 CB/C study: "Highly-rated learning organizations are almost 50% more likely to report better overall levels of profitability than those rated least favourably ...They provide training to 20% more of their employees, and spend $474 more per capita on training and development." (News release 01-58)

In a recent research report the authors noted that: "in recent years, a substantial literature analyzing the extent and consequences of on-the-job training has emerged...studies find support for the human capital model's prediction that a worker's wage is positively related to past investments in his training" (Frazis and Loewenstein, 1999 p.1). Although there is a widespread agreement that workplace learning is positively associated with wage growth, the authors point out that relatively little attention has been paid to the size of the effect and, in fact, go so far as to say that:

> "We are aware of two attempts to calculate rates of return to on-the-job training. Mincer's (1989) review calculates rates of return in the range of 32-48 percent before depreciation. Bartel (1995), using a company dataset, estimates the rate of return to training at 58 percent before depreciation; her calculation includes direct costs of training. Allowing for depreciation substantially reduces these numbers—

Mincer's range after correction is from 4 to 26 percent, using Lillard and Tan's (1986) 15-20% depreciation rate; Bartel's is 42 percent with 10 depreciation and 26 percent with 30 percent depreciation. Interestingly, Lengermann (1999) finds no evidence that the return to training depreciates with time". (Frazis and Loewenstein p.1)

The authors' study makes the following ROI observations:

(i) there are very high returns to initial formal or informal on-the-job training, especially for workers with low levels of (company) tenure and job-related work experience, e.g., data show a wage return to the first 40 hours of formal training as large as eight percent for individuals in this situation ("which is roughly the same magnitude as estimated returns to a year of schooling");

(ii) training is a substitute for early career experience;

(iii) approximately 95 percent of workers receive informal training averaging 134 hours during the first three months of employment, with only 13 percent receiving formal training averaging 75 hours (p. 17), however an hour of formal training should be counted as being worth 19 hours of informal training;

(iv) formal and informal training are sufficiently close substitutes that they can meaningfully be summed to form a measure of aggregate training with the median hours of formal training increase a worker's wage by 6.2 percent, while the median hours of informal training raise the wage by 3.8 percent. The implied annualized rates of return of training are 308 percent and 103 percent, respectively, and with the understanding that the return to training diminishes beyond the initial training stage;

(v) if a week of formal training raises productivity by eight percent, a worker need only be with a firm for 13 weeks for a training investment to break-even, yet less than 50 percent of respondents from establishments with over 1,000 employees ever receive any formal training during the time they were part of the study;

(vi) since the skills for different jobs are heterogeneous, it makes sense that the returns to training differ across jobs; and

(vii) there is ample evidence that indicates that training is higher for more productive workers, presumably because their cost of training is lower and/or their return to training is higher. (Frazis and Loewenstein 1999, pp. 3 - 33)

In the end, the authors found that their review and recalculation of large sets of data led them to speculate that "the brief but powerful training spells we observe reflect training that is oriented toward teaching how to perform job-related tasks rather than broad human capital development. For example, teaching a computer programmer a new programming language may greatly increase his or her productivity in a given job, but training much beyond the basics of the language may have quite small effects. Broader development of programming skills may be left to prior (or on-going) schooling or to on job experience". (Frazis and Loewenstein 1999, p. 38)

INTERNATIONAL COMPARISONS

Documents and Databases

For purposes of international comparison, the Conference Board of Canada reported that, in 1998, The World Competitiveness Yearbook ranked Canada 23rd out of 46 countries in terms of industry investment in in-company training. In The 1998 Global Competitiveness Report, Canada had a better ranking of 13th out of 53 countries when calculating the number of employers with well-developed training programs for employees.

A similar international picture is painted by the 1999 CB/C Survey, indicating that Canadian organizations had lower total training expenditures, either per capita or as a percentage of payroll, than their counterpart organizations in Europe, the United States and the Asia-Pacific region. (CB/C, pp. 2-3). As well, the 2001 CB/C survey noted that: "Canadian organizations report significantly higher ratios of employees to training staff than organizations in the United States, Europe, Asia or the Pacific. They fall in the 'middle of the pack' in comparisons of training payments to outside companies

and total training hours per employee". (p.14). As well, "in comparison with that of its largest training partner, the United States, US firms reported training approximately 7% more employees and spending 11% more on per capita training investments than Canadian firms. Yet Canadian firms indicated that they provide an average of four more hours of training per employee". (p. 14)

Given the financial involvement, incidence of participation in training, and level of formal training noted previously, it is appropriate to ask how these efforts translate into the amount of time (effort) actually spent on work-related learning in Canada. The data (1994) in Table 11 presents Canadian figures in relation to five other countries. This included all forms of workplace learning: (i) employer-supported; (ii) government supported; and (iii) self-supported. As noted by the author, "Canada's training effort relative to that of other countries was average" (Kapsalis 1998, pp.23-24). Canada recorded an average of 44 training hours in 1994, which was comparable to Switzerland (50 hours), United States (45 hours) and Germany (42 hours), but far below that of the Netherlands (74 hours).

Table 10: Perceived Establishment Training Impacts (Canada, 1995)
Percentage (%) Distribution By Degree Of Success*

	Low (1,2)	Medium (3,4,5)	High (6,7)	Total
	%	%	%	%
Higher productivity	1.7	55.4	42.9	100.0
Higher quality products	7.3	44.2	48.5	100.0
Assurance of supply of skills	11.4	56.3	32.3	100.0
Greater employee commitment	5.3	60.1	34.6	100.0
Greater employee adaptability	2.8	61.8	35.4	100.0
Overall importance of training to success of establishment	1.0	29.7	69.3	100.0

Source: Betcherman, et. al., p. 72.
Note: measured on a 7-point scale

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Greater employee adaptability	2.8	61.8	35.4	100.0
Overall importance of training to success of establishment	1.0	29.7	69.3	100.0

Source: Betcherman, et. al., p. 72.
Note: measured on a 7-point scale

IV. POLICY DIALOGUE

Issues and Questions

The request for this study was prompted by ITAC's continuing concern that current and pending trade and technical skill shortages could have a devastating effect on the economic development of this province. On the other hand, ITAC has also recognized that addressing this skill shortage imaginatively and aggressively could position British Columbia as a leader within Canada – and beyond – in responding to labour market pressures that have no precedent in the Western world. In short, ITAC has recognized that these are new times with new training and employment needs.

To address these unique training and labour market realities, ITAC determined that it needed – among other things - more and better information about who invests in the development of our trade and technical skill personnel, how they are educated and trained for their work, who benefits from these investments in our common future, and similar public policy matters. This study was intended to be a step toward the creation of a sound and extensive information base upon which training or "work-related learning" policy might be shaped.

Despite the fact that the results of this study are preliminary and imprecise, it is clear that it has already highlighted several basic policy issues. It seems valuable for ITAC members to engage in a conversation around these or similar issues before any long-term policy decisions are made. The following questions, which arise from this study, seem particularly relevant to the mandate of ITAC and might serve as a basis for such policy dialogue:

- Is there under-investment and/or the need for redistribution of investments in "work-related learning" across different categories or by different investors? To ensure a sufficiently large and adequately skilled trade and technical skill workforce, are there good alternatives to increased investment?
- If greater investment in "work-related learning" is found to be necessary, where should the additional investment come from? Should trainees pay more for their training and, if so, on what basis? Should industry invest

more heavily in training and, if so, on what basis? Should governments invest more and, if so, on what basis? Is a training tax or training tax credit or other public policy instrument an appropriate way of increasing investment in training?

- Would it make sense to increase the costs of training to trainees at a time when the economy needs more young people with more skills and knowledge? Or would higher costs be a disincentive at a time when incentives for training should be provided? Should post-secondary and adult students be charged more for their training at a time when knowledge and skill are becoming so central to personal workforce success and corporate economic performance?

- Are the current investments in "work-related learning" strategically distributed to individuals or population sub-groups, the private and public sectors, industrial sectors, and geographic areas of the province in such a way as to address effectively and efficiently the highest priority trade and technical skill shortages that exist or are anticipated?

- Are there constructive ways of ensuring that resources for "work-related learning" are used to meet the needs of the entire workforce, rather than largely of those who already have more education/training, those who are unionized, and those with full-time employment? How important is equity in the use of investments in work-related learning?

- Are there more cost effective and efficient ways of training, upgrading, or retraining the skilled trades and technical personnel we need if we are to avoid a serious skilled labour shortage in the immediate future?

- Are there more cost effective and efficient ways of determining whether trainees have the knowledge and skills they require to be high quality workers with secure long term employment prospects? Should Prior Learning Assessment and competency testing of trainees play a more prominent role in determining qualifications and credentials?

- With the large percentage of British Columbians for whom English is a second language and for whom written testing is almost an insurmountable hurdle, are there fair ways of determining whether people who acquired trade and technical skills in another country might be able to assist in addressing the critical skill shortages to be faced in this province?

- Given the very high return on investment in on-the-job training, especially for new employees, should ITAC be aggressive in promoting the "initial training return on investment" concept?

Conclusions and Directions

The evidence in this report prompts a conclusion that British Columbia, compared with other jurisdictions in Canada, has been doing well with respect to work-related learning and addressing critical trade and technical skill shortages. British Columbia has not been "out front" but this province has not been lagging either. The evidence equally suggests that Canada – including British Columbia – has not done particularly well in these areas as compared with some of our competitor nations; we have been in the middle of the pack or somewhat less than that.

However, it is valuable to recognize that labour market conditions and skill needs of even the last five years are no longer dependable for policy planning, and that British Columbia is now part of a highly competitive world economy with severe skilled labour shortages, both domestic and international.

It seems apparent that British Columbia has to make important decisions about its immediate economic future and that investment in learning must be a central feature of any provincial economic strategy.

What next?

It is tempting to propose that a more detailed and intensive study of "work-related learning" should be undertaken promptly, given that this study was to be, and is, but preliminary and not definitive. It is clear that information contained in this study

merits more detailed examination. It is also clear that some additional original research in this province could produce very rich, useful, and relevant information upon which action could be based. It would also seem of value for British Columbia to replicate studies elsewhere – particularly in the US – that track trends in investment in work-related learning. There are good grounds for more detailed study.

On the other hand, this report also highlights the reality that much of "training" today is either informal or non-formal, and that it is not easily measured – that "working" and "learning" are becoming indistinguishable. There is also the reality that a call for "further research" could simply become a pretext to delay decision and action.

In such circumstances, initiating the policy conversation noted immediately above appears to be the best immediate course of action for ITAC to take. That dialogue could help to delineate what additional information is necessary for policy decision-making and therefore what additional research may be required. However, bold action as well as study and research seems urgent.

APPENDIX A

Barriers, Disincentives, and Obstacles to Work-Related Learning

The literature on this topic is rather extensive and in this regard the terms "barriers", "disincentives" and "obstacles" are, for the most part, used interchangeably. In a recent paper it was noted that: "...at least in the prevailing North American context, governments are unlikely to intervene in any major direct way to shape workplace training"..."however, they clearly have an interest in considering how public policy can create an environment where barriers are minimized and investment (in workplace training – eds.) is optimal." (Betcherman et al. 1998, p1.). ITAC's 2001 report, Ensuring A Skilled Workforce for British Columbia, is also a good source of information on barriers and obstacles to work-related learning.

The research literature (both Canadian and other) identifies a number of barriers to increased employer investment in trainees and their regular employees:

(i) Fear of losing workers once they are trained;
(ii) Cost of training, especially formal training;
(iii) Inability to measure organizational HRD investments either from a standard accounting framework, or an ROI perspective (or both);
(iv) Lack of information about the supply side of the training including availability of government training programs, training courses by both private and public sector training institutions in general and training locations outside the organization;
(v) Workforce-related obstacles, that is, studies have found that employee demand for training has a positive impact on the incidence of employer-provided training, e.g., "regression analysis indicated that employee demand for training increased the likelihood of employer-sponsored training by one-third"; as well as a negative impact: data indicate that 55% of employees reported being "too busy" to take training needed for work, 29% found that training time or location too inconvenient and 12% reported family responsibilities as a reason for not training. (Betcherman et al. p. 9);
(vi) Abundance of surplus skilled labor available;
(vii) High skill/low skill job strategies, that is, high-skill jobs create an employer incentive to make investments in job-specific workplace learning that builds on previous employee skills, knowledge and experience; whereas, low-skill jobs create a disincentive to design jobs in such a way to require workplace learning interventions. However, an employer that follows the later strategy will find it very difficult to change skills strategy by training their existing workforce
(viii) Expectations by employers surrounding government responsibility to provide significant financial incentives for workplace learning; and
(ix) Tax-related factors, that is, training as an operational tax deduction from profit or a tax credit; treatment of training tax deduction outcomes versus other operational or capital tax deduction outcomes.

Recent B.C and Canadian Data on Barriers

"Losing trained workers to other organizations" appears to be the least important obstacle (11.4%) to training, both in BC and, although less so, in Canada (15.5%). Considering that B.C. employers are the highest users of government workplace learning assistance, it is not surprising that this obstacle remains less (19.5%) than the Canadian average (22.7%). "Training costs" (29.1%) and "lost production time" at 26.6% (also a cost), are the greatest obstacles to formal workplace learning activities in BC organizations; although not so for Canada as a whole. A definitive answer to this wide variance was not given by any author, but it may be due to a relatively high proportion of smaller employers in B.C. Ignorance about training suppliers and related production and delivery resources is virtually identical in B.C as in Canada.

Table A-1: Percentage Incidence Of Training Obstacles By Region (1995)

Obstacles	British Columbia	Canada
Training costs the organization too much	29.1%	20.2%
Lost production time while teaching	26.6	16.4
Insufficient government assistance	19.5	22.7
Lose trained workers to other organizations	11.4	15.5
Lack of suitable training courses/trainers	16.5	16.7

Source: Betcherman et al 1998, p. 25
Notes: these are weighted figures; data derived from establishments responding 6,7 ("yes" a major problem on a 7-point scale varying from 1 (not a problem) to 7 (a major problem); all differences are significant at a 1% level

APPENDIX B

Training Commitment: Unionization and Sector Environments

Provisions for training are an important part of collective agreements. Among 989 agreements in Canada in effect in January 1998 that were applicable to bargaining units of at least 500 employees (covering a total of 2.2 million employees):

(i) 46% of the agreements representing 54% of covered employees included provisions for paid on-the-job training;
(ii) 22% of the agreements representing 22% of the covered employees provided for the right to retraining in the event of technological change;
(iii) 19% of the agreements representing 24% of covered employees paid or partly paid job-related education leave;
(iv) 34% of the agreements representing 34% of covered employees provided for apprenticeships; and
(v) 33% of the agreements representing 42% of the covered employees included financial assistance for courses taken outside the workplace. (Encouraging Employer Sponsored Training)

Although the 1999 and 2001 CD/C surveys were limited and not meant to be fully valid or reliable, the data do suggest some indicators. Unlike non-unionized organizations, unionized organizations have lower payroll percentages for training, less expectation for future short-term increases, and fewer full-time trainers per employee.

For the 2001 CB/C survey, 'highly unionized' organizations scored higher on training hours per employee, availability of both regular and virtual training resource centres, train-the-trainer courses, rotational staff training, and employee job rotation. They scored lower than the 'non-unionized' respondents in mandatory annual training time, availability of mentoring or coaching programs, apprenticeship training, employer-sponsored conference attendance, and tuition reimbursement. For the 1999 survey report, 'highly unionized' organizations scored higher than their 'non-unionized' counterparts in mandatory annual training time; apprenticeship training; having a training resource centre, conduct of train-the-trainer courses; line-on-loan or rotational training staff and tuition reimbursement opportunities.

When asked, 'highly unionized' employers from both 1999 and 2001 surveys rated themselves (versus their peers) lower than the non-unionized employers in the following areas: ability to retain essential employees; employee satisfaction; quality of production/services and customer satisfaction. The surveys differed in that the 1998 survey showed the 'overall profitability factor for 'non-unionized' (39.0%) was significantly lower than 'low unionized' (62.5%), and virtually the same as 'high unionized' (37.0%). The 2001 survey showed different 'overall profitability' results: 61.9% (non-unionized), 59.1% (low unionized), and 56.4% (highly unionized).

Table B-1: Work-Related Learning By Level Of Unionization (Canada, 1998)

Topics	No Union	Low Union	High Union
Percentage of payroll for training	2.0%	1.6%	1.2%
Percentage of organizations predicting training expenditures for the following year (1997/98) to:			
Increase	55.2%	56.5%	42.2%
Stay the same	36.2	39.1	51.1
Decrease	8.6	4.3	6.7
Percentage of employees receiving training in 1998 (estimate)	82.3%	75.9%	78.4%
Employees to full-time training staff	256:1	459:1	451:1
Organizational use of training practices/programs:			
Mandatory annual training time	38.9%	20.8%	41.3%
Mentoring or coaching programs	61.1	66.7	54.4
Apprenticeship training	45.8	66.6	56.5
Training resource centre	74.6	75.0	78.2
Train-the-trainer courses	81.4	70.8	86.9
Line-on-loan or rotational training staff	49.2	58.3	73.8
Employer-supported conference attendance	100.0	95.8	100.0
Tuition reimbursement	93.2	91.7	100.0
Organizational performance – rated better versus peers:			
Ability to retain essential employees	35.6%	29.2%	26.1%
Employee satisfaction	44.1	45.8	28.3
Quality of products/services	62.7	45.8	41.3
Customer satisfaction	49.2	45.8	30.4
Overall profitability	39.0	62.5	37.0

Source: CB/C 1999, p. 17

Private and Public Sector Commitment to Training

The 1999 and 2001 CB/C Survey data reports for three general sectors (federal/provincial governments and crown corporations; municipalities, universities, schools, and hospitals; and private sector organizations) appear to be somewhat consistent. The percentage of payroll allocated for training as well as the expected increase in training expenditures over the short-term are both significantly higher for the federal and private sectors, over the municipal and provincial sectors. However, in the 1999 Survey report, the percentage of employees receiving training in each sector is virtually identical, although the federal sector has the best full-time training staff to employee ratio. Estimated figures in the 2001 Survey were quite varied: 76.3% (federal/crown), 86.4% (provincial/crown), 52.9% (municipal), and 77.5% (private sector).

From the perspective of organizational use of training practices/programs, the 1998 CB/C Survey had the private sector ahead of the other two sectors in mentoring/coaching programs and apprenticeship training, but behind the federal sector in mandatory annual training time and line-on-line or rotational training staff. For training resource centre availability, employer-supported conference attendance and tuition reimbursement all three sectors are similar with the exception of the municipal/provincial sector for training resource centre availability. The 2001 CB/C Survey rated the private sector ahead of all others in only two categories: apprenticeship training and employee job rotation (cross training). The provincial/crown sector led in two categories: train-the-trainer courses and line-on-loan or rotational staff

training. The federal/crown sector led in the majority of categories: mandatory annual training time, mentoring or coaching programs, training resource centres (virtual), employer-supported conference attendance and tuition reimbursement. The municipal sector led in only one category: traditional training resource centre.

In all five of the organizational performance categories (rated better versus peers), the federal sector remains significantly behind both its municipal/provincial counterpart sector as well as the private sector. The 2001 CB/C Survey differs in that the municipal ("MUSH") organizations scored highest on: ability to retain essential employees and employee satisfaction, with the private sector scoring higher on the remaining categories: quality of products/services, customer satisfaction, and overall profitability.

Table B-2: Work-Related Learning By Sector (Canada, 1998)

Topics	Federal, Provincial, Crown	Municipal, Universities, Schools, Hospitals	Private Sector Organizations
Percentage of payroll for training	1.7%	0.8%	1.7%
Percentage of organizations predicting training expenditures for the following year (1997/98) to:			
Increase	55.7%	35.7%	50.0%
Stay the same	44.4	50.0	41.7
Decrease	0.0	14.3	8.3
Percentage of employees receiving training in 1998 (estimate)	81.1%	81.8%	79.0%
Employees to full-time training staff	207:1	648:1	382:1
Organizational use of training practices/programs:			
Mandatory annual training time	39.0%	42.9%	34.3%
Mentoring or coaching programs	50.0	57.2	63.6
Apprenticeship training	50.1	35.7	68.6
Training resource center	77.7	64.2	77.8
Train-the-trainer courses	88.9	78.5	81.9
Line-on-loan or rotational training staff	83.4	42.8	58.6
Employer-supported conference attendance	100.0	100.0	99.0
Tuition reimbursement	100.0	92.8	96.9
Organizational performance – rated better versus peers:			
Ability to retain essential employees	5.6%	35.7%	36.7%
Employee satisfaction	5.6	50.0	43.9
Quality of products/services	27.8	50.0	59.2
Customer satisfaction	16.7	35.7	50.0
Overall profitability	22.2	28.6	50.0

Source: CB/C 1999, p. 18

APPENDIX C

Training Investment, Returns and Tangible Or Intangible Costs Of Work-Related Training

(from: Dr. Kathryn Barker, **"Return on Training Investment: "An Environmental Scan and Literature Review"**, FutureEd, Spring 2001, pp. 60-61.

TRAINING INVESTMENT	TRAINING RETURNS
• **Direct Training Costs for Employers**	• **Tangible Training Benefits**
___ cost of needs analysis/surveys ___ course design, development, or purchase ___ salary of instructor and/or consultant ___ salary of staff while on training ___ offsite travel, lodging, and meals ___ facilities rented or allocated ___ equipment and hardware ___ instructional and testing materials ___ course/training evaluation	___ improved overall productivity ___ improved overall quality ___ improved competitiveness ___ improved profitability ___ improved understanding of markets ___ broadening the range of workers' tasks ___ meeting jobs' changing skill requirements ___ orientation of new employees ___ meeting a shortage of qualified labour ___ improved output per employee ___ reduced waste or scrap ___ improved customer satisfaction ___ improved safety record ___ increased sales ___ compliance with regulations ___ reduced employee absenteeism ___ reduced employee tardiness ___ reduced employee use of dispensary ___ reduced safety-rule violations ___ reduced employee grievances ___ fewer strikes ___ reduced employee turnover ___ reduced discrimination charges ___ increased number of promotions ___ increased number of pay increases ___ increased number of training programs ___ number of requests for transfer ___ improved performance-appraisal ratings ___ implementation of new ideas ___ reduced legal costs ___ reduced insurance costs ___ successful completion of projects ___ number of employee suggestions ___ frequency of goal setting ___ reduced supervision ___ reduced help from co-workers ___ reduced calls to help line ___ reduced downtime ___ worker hours saved ___ reduced time to perform operations ___ reduced overtime ___ fewer mistakes ___ fewer employees needed
• **Direct Training Costs for Individuals**	
___ tuition ___ childcare ___ books and materials ___ equipment, e.g., computer ___ travel / parking ___ special fees, e.g., library ___ loss of income	

TRAINING INVESTMENT	TRAINING RETURNS
• **Intangible Training Costs**	• **Intangible Training Benefits**
___ loss of productivity while trainees are attending training ___ other employee time related to training, e.g., manager time helping to apply training ___ missed opportunity cost ___ induction costs ___ cost of replacing the employee while s/he is attending the course ___ maintenance costs, e.g., mail, transport, refreshments, record keeping, stationery, accommodation ___ higher wastage rates until the trainee is fully proficient ___ recruitment of training staff or selection of training package ___ the risk that a more highly trained employee may then obtain another job	___ improved understanding of new technologies ___ remediating workers' inadequate pre-employment preparation ___ improved employee morale ___ greater co-operation among employees ___ better management-employee relations ___ better employee understanding of the organization ___ greater employee flexibility ___ greater employee loyalty ___ improved employee work ethic ___ less employee stress ___ improved employee motivation ___ increased employee self-confidence ___ improved employee perceptions of job responsibilities ___ improved decisions made ___ more problems solved ___ conflicts avoided ___ greater employee job satisfaction ___ more portable employee skills and job mobility ___ greater employee job security ___ improved employee pay and benefits ___ increased use by employees of performance measures and standards, benchmarking and quality control methods

If a program planner or research analyst attempts to acquire this data or to make the next step by also attempting to acquire societal or governmental data, and information, the difficulties related to acquisition and specific component defense are obvious. However, where one can use the components based on a review of related literature or secondary source data and information it is always recommended to do so. This does not mean that specific data needs to be presented. Rather, one can state that a work-related learning program can have effects external to the participant or the sponsoring agency, and previous studies involving related programming activities have indicated certain outcomes.

Costs

The cost data to be considered is usually made available through an institution's accounting department. Although a number of authors referred to in the ITAC study have noted that availability of such data various considerably from organization to organization. In addition to these "direct" costs, there are the opportunity costs as described above. Generally speaking, opportunity costs are not applied to so-called "hard core unemployables". Other costs to the individual would be the loss of any unemployment benefits, welfare payments, etc. that may have to be relinquished or substantially reduced while attending the work-related learning program.

As in the case with benefits, only those costs that are clearly definable, related to the organization and the participant, and are able to be captured for a reasonable cost should be considered. Other costs may be included but only as "by-products", unless data is available.

Conclusion

Once the benefits and costs are assembled, "the essential principle is that all prices must be reckoned on the same basis, and for convenience this will normally be the price-level prevailing in the initial year". (Prest and Twrvey, p. 690) Therefore, when cost and benefit components are compared, the comparison must be made at a given time. Since, in most cases, the costs and benefits accrue over a period of years, they must be discounted in order to take into account the time factor. In the end, there are three common methods of comparing costs and benefits of a work-related learning training activity: present value of net benefits; rate of return; and, benefit-cost ratios (Corbin p. 677).

As with any form of rationale used for the development and evaluation of work-related learning activities, CBA and its two key components: externalities and opportunity costs, are but one technique. However, the difficulty and cost of obtaining these data are, as noted above, to be seriously contemplated before any such study. Furthermore, and as pointed out by Frazis in an e-mail to Lamoureux (June 25, 2001):

> "We (with Loewenstein) were implicitly using a framework similar to that used in estimating rates of return to schooling. For schooling, a student deciding to attend school for another year forgoes the opportunity to enter the labor market immediately--thus his opportunity cost is the wage he could have gotten had he quit school. Neglecting direct costs such as tuition, his return is the percentage increase in his wages from the additional schooling.
>
> Applying this to training, we think of the employee's pre-training wage as an indicator of his pre-training productivity, and his post-training wage as an indicator of his post-training productivity. The opportunity cost is the production given up during the period of training (we assume that production is zero during training), which under our assumption equals the employee's

> wages during training. Neglecting direct costs of training, the increase in wages is under these assumptions equal to the productivity return to training."

Thus, and because of the cost, complexity and relative difficulty of acquiring work-related training data, experienced economists generally simplify their research in order to achieve reasonable approximations of cost and benefit realities.

Results-Based Management (RBM)

A new era surrounding the development and evaluation of work-related learning, technical education and vocational training (TVET), apprenticeship programming and a host of other human resource development (HRD) initiatives began in Canada in the middle 1990's. Through the auspicious of the Federal Auditor General of Canada's offices, and as part of a set of public sector reforms, a more results-oriented and accountable style of management has been introduced throughout Canada, as well as internationally through CIDA Canadian International Development Agency) projects.

In short RBM is a participatory and team-based approach to project management that seeks to focus an organization's efforts and resources on the achievement of results. Thus, RBM involves the participation of stakeholders in the:

(i) planning of projects;
(ii) implementation of the projects; and
(iii) monitoring and reporting of results.

Potential Components For A Benefit-Cost Calculation Of A Sponsored Workplace Training Program

BENEFITS TO:	**BENEFITS TO:**	**BENEFITS TO:**
Society	**The Individual**	**Government**
Increase in earning of program participants (gross of taxes)	Increase in earning (net of taxes)	Increase in taxes: a. from participants b. from others
Increases in other income (gross of taxes): a. to pay for fringe benefits b. due to other resources becoming more productive c. due to increasing the productivity of future generations as children become better educated (inter generation effect) d. due to previously unemployed workers taking jobs vacated by program participants (vacuum effect)	Additional fringe benefits due to increased income	Decrease in expenses of: a. unemployment insurance b. employment service c. welfare programs d. crime control
Reduction in administrative expenses of transfer payment programs: a. unemployment administration b. employment service operation c. welfare program administration		
Reduced costs to society due to bad citizenship: a. economic loss to others b. crime control system		
COSTS TO:	**COSTS TO:**	**COSTS TO:**
Society	**The Individual**	**Government**
Opportunity costs (gross of taxes)	Opportunity costs (net of taxes)	Costs of instructor and supplies (net of taxes)
Operating costs of training or education agency	Loss of transfer payments: a. welfare support b. unemployment insurance c. other subsidies	Capital costs
Capital expenses of training or training agency	Extra costs related to program participation: a. tuition b. books, supplies, etc. c. travel to course d. other similar costs	Additional administrative costs (net of taxes)
Induced reductions in income (gross of taxes) of workers displaced by program participants (displacement effect)		Additional subsidies paid during training

In effect, RBM defines a results chain that:

(i) links project inputs (human and capital resources) to planned activities; then to

(ii) outputs derived from the activities (results normally involving individual and/or group participation); then to

(iii) outcomes derived from the application of newly acquired skills and knowledge of the participants (results normally involving the institution or sector); and, finally

(iv) impacts, which are long-term results that normally affect society and occur after the completion of the project.

Throughout the progress of the project many forms of assessment and evaluation take place to determine if the project is achieving its pre-determined results along each part of the RBM chain. The results are themselves linked to pre-determined measurement indicators. The process must be participatory, transparent and iterative. That is, consultation of stakeholders must occur, results made public and changes during the lifetime of a project are assumed to always occur, with adjustments to the management and results of a project inevitable and not to be discouraged.

For the purposes of this report it must be understood that RBM is a newly emerging management and analytical technique that will, in the future, help to measure the results (outputs, outcomes and impacts) and, for that matter, return on investment of work-related learning, TVET, apprenticeship and other ITAC-related initiatives. Presently, however, there appear to be no studies available that have comprehensively analyzed either domestic (local, provincial or national) or international (CIDA) projects using a RBM methodology.

However, it should be noted that when the governments of British Columbia and Canada entered into a joint Labour Market Development Agreement (LMDA) on April 25, 1997 to facilitate the co-management of labour market development programs in B.C., a modified RBM structure was put into place:

> "Under the Accountability Framework included in the Agreement, a two-phase evaluation (formative and summative) is to be conducted. This report presents findings from the formative evaluation. Other reports relating to this evaluation include Methodology Report, Technical Report, Evaluation Brief, Recommendations, Lessons Learned and What Worked Well." (Formative Evaluation ...)

The formative evaluation has been completed and a number of outcomes on three client groups were identified, that is, Employment Benefits and Support Measures (EBSM) are expected to produce a number of outcomes for participants, the community and partners.

INTERVIEW LIST

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END NOTES

1. Data were supplied for this study on special request from the Centre for Education Statistics, Statistics Canada, May 1, 2001. The original database is: Statistics Canada, Adult Education and Training Survey, 1998.

2. As noted by Statistics Canada: "participation in job-related and personal interest education and training do not sum to the overall participation because a certain number of people participated in more than one category".

3. The "union/professional organization" category was not a reliable figure as the coefficient of variation was greater than 33%; and, the "other" and "no fee" has less reliability as they had a coefficient of variation between 16% and 33%.

4. This appendix is taken from Marvin Lamoureux (1975). "Planning, Programming and Budgeting Systems and Cost Benefit Analysis: Economic Considerations for Adult Education". Occasional Paper No.5, Pacific Association for Continuing Education. Burnaby, B.C, July.

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